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UNITED STATES DEPARTMENT OF COMMERCE
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/427,457 10/16/99 ANDERSEN G AFB00497

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MMC1/0728

EXAMINER

CHANG, A

ART UNIT

PAPER NUMBER

2872

DATE MAILED:

07/28/00

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.
09/427,457

Applicant(s)
Andersen

Examiner
Audrey Chang

Group Art Unit
2872



☐ Responsive to communication(s) filed on _____

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) 1-39 is/are pending in the application.

Of the above, claim(s) _____ is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 1-39 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☒ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been
☐ received.

☐ received in Application No. (Series Code/Serial Number) _____.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

☐ Interview Summary, PTO-413

☒ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

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DETAILED ACTION

Specification

1. The abstract of the disclosure is objected to because it contains language such as "this invention provides" that is not concise. Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1, 2-14, 15-17, 18, 21-31, 32-36, and 37 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The phrase "illuminated said article with a coherent beam" recited in various independent claims appears to be vague and indefinite since it is not clear how does this "coherent beam" relate to the coherent beams recited in the earlier part of the claims. It is fundamentally true that the coherent beam used to play back the hologram must be the same as either of the reference beam or the object beam used to record the hologram.

The phrase "up to ... or more" recited in claims 7-8, 16, 25-26 and 33 appears to be vague and indefinite since it is not clear what is the definite ranges recited here.

The phrase "a first spatial filter or a pinhole" recited in claim 12 appears to be vague and indefinite since it is not clear how does this element relate to the "pinhole" recited in its based claim.

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The term “the objective” recited in claims 18 and 37, the term “the article” recited in claim 37 and the term “said image” recited in claim 36 appear to be vague and indefinite since they each lacks a proper antecedent basis from the earlier part of the claims or from its based claim. Claim 36 appears to be confusing and it is not clear what feature is recited here as the limitation.

St. 11 Claim 33 is incomplete since it fails to recite the structural relationship of the “objective-lens system” with the image correction arrangement recited in its based claim.

Claim 35 appears to be vague and indefinite since it is not clear why “a microscope of relatively large field of view” may be obtained by passing the object beam and the reference beam through a pinhole array.

Clarifications are required. The dependent claims inherit the rejections from their based claims respectively.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1, 2-14, 15-17, 18, 19, 20, 21-31, 32-36, 37, 38 and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over the article “Window aberration correction in laser velocimetry using multifaceted holographic optical elements” by Schock et al, Applied Optics Vol. 23, No. 5, pages 752-756, in view of the patent issued to Friedl (PN. 3,598,466).

Schock et al teaches a holographic optical element that is capable of correcting aberrations of an optical element wherein the holographic optical element is formed by generating a coherent light beam from

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a laser light source, passing the coherent beam through a beam splitter to split the beam into a first and a second coherent beams, and then passing the first coherent beam through a first pinhole plate and an optical system, having the aberrations desired to be corrected, to form an object beam and passing the second coherent beam through a second pinhole plate and a collimating lens to form collimated reference beam and directing the object beam and the reference beam to a holographic recording film to form the hologram, (please see Figure 6 and 7, pages 754-755). This reference has met all the limitations of the claims with exception that it does not teach explicitly that the optical system intended to be corrected includes an objective and an article or object is replacing the pinhole plate at the objective beam path such that by illuminating the article an corrected image of the article is produced, however such features would have been obvious modifications to one skilled in the art since it is very well known in the art to record a hologram in essentially the same manner as disclosed by Schock et al with a lens to correct the aberrations of the lens and to use the hologram with the lens to obtain a corrected image of an object as demonstrated by the teachings of Friedl, (please see columns 1, 3-4 and Figure 1). It further would have been an obvious matter of design choice to one skilled in the art to modify the holographic optical element according to the teachings of Friedl for the benefit of obtaining corrected image from an optical objective element.

With regard to the features concerning the optical system may also be a concave mirror and being tilted to an off-axis position, although these references do not teach such features explicitly however since concave mirror is a common type of optical system and the specification fails to teach the criticality of having this particular arrangement would overcome any problem in prior art such features are therefore being considered as obvious matter of design choices.

With regard to the features concerning the sizes of the systems, these references do not teach such features explicitly however they are either inherently met by the arrangements of the cited references or an

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obvious modifications to one skilled in the art since a change in size is generally recognized as being within the level of ordinary skill in the art. In re Rose, 105 USPQ 237 (CCPA 1955).

With regard to the features concerning the holographic optical element being used in a microscope, these references do not teach such explicitly however it has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. Ex Parte Masham, 2 USPQ2d 1647 (1987).

With regard to the features concerning the pinhole plates used being an array of pinholes, these references do not teach such features explicitly however such modifications would have been an obvious matter of design choice to one having ordinary skill in the art since it is known in the art to use pinhole array to produce a plurality of point light sources for generating a plurality of light beams as opposed to single pinhole as single point light source for generating single light beam and since the specification fails to teach the criticality of having a pinhole array would overcome and problem with using single pinhole plate.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US patent issued to Reynolds et al (PN. 4,902,100) teaches a method and an apparatus for recording hologram for removing phase aberrations in optical window.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Chang whose telephone number is (703) 305-6208.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0956.

Papers related to this application may be submitted to Group 2800 through facsimile transmission. Papers should be faxed to Group 2800 via PTO Fax Center (fax number 703-308-7722) located in Crystal Plaza 4.

A handwritten signature in black ink, appearing to read 'Audrey Chang', with a long, sweeping horizontal stroke extending to the left.

Audrey Chang
Primary Examiner
Technology Center 2800

A. Chang

July 26, 2000